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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,643	07/15/2003	Philippe Schottland	134400-1	8576

43248 7590 09/26/2005

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EXAMINER	
RONESI, VICKEY M	

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/619,643	SCHOTTLAND ET AL.	
	Examiner	Art Unit	
	Vickey Ronesi	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/10/05, 8/19/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-37 are now pending in the application.

2. All outstanding rejections are withdrawn in light of applicant's amendment filed 6/29/2005.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

4. New grounds of rejection are set forth below. Thus, *a 3rd non-final Office action is set forth as follows.*

Claim Objections

5. Claims 1, 15, 24, and 32 are objected to because of the following reasons:

With respect to claims 1, 24, 32, for the group *R*, "3-N,N-dimethylaminopropylamine" is incorrect nomenclature since it is clear that a functional group was intended. It is suggested that "3-N,N-dimethylaminopropylamine" be replaced with "3-N,N-dimethylaminopropyl".

With respect to claim 15, it is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The compound "1,8-dialkyldiaminoanthraquinone" is not encompassed by claim 1 where the 1,8-diaminoanthraquinone is defined as not having an alkyl group as *R*.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. Claims 1-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 1, 24, 32, and 37, the term "an allyl group containing 3 to 20 carbon atoms" causes confusion since an allyl group, by definition, only has 3 carbon atoms. Note that support is not had for alkenyl groups.

With respect to claims 2-23, 25-31, and 33-36, they are rejected for being dependent on a rejected claim.

Claim Rejections - 35 USC § 102

7. Claim 37 is rejected under 35 U.S.C. 102(b) as being anticipated by Toth (US 3,875,191).

Toth discloses1,8-dihydroxylaminoanthraquinone (col. 5, lines 41-42) having an exemplified purity of greater than 90 wt % (see examples), where the the hydroxylaminoanthraquinones are reduced to aminoanthraquinones before being utilized as a dye (abstract).

In light of the above, it is clear that Toth anticipates the presently cited claim.

Claim Rejections - 35 USC § 102/103

8. Claim 37 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Thiem et al (US 3,933,868).

Thiem et al discloses 1,8-diaminoanthraquinone (i.e., R = hydrogen and R_2-R_7 = hydrogen) with a purity of 90 wt % (col. 3, lines 59-68).

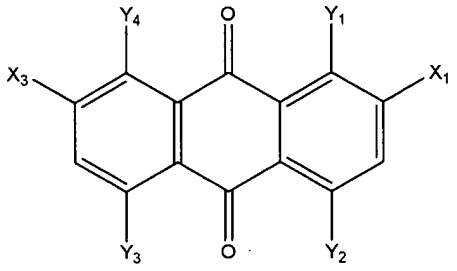
In light of the above, it is clear that Thiem et al anticipates the presently cited claim.

While Thiem et al does not disclose other purities greater than 90 wt % of 1,8-diaminoanthraquinone, it is considered that it would have been obvious to one of ordinary skill in the art to either obtain a purity of greater than 90 wt % with Thiem et al's purification technique or to utilize another known purification technique which would provide the presently claimed purity given Thiem et al's explicit intent to purify the dyes.

Claim Rejections - 35 USC § 103

9. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blunck et al (US 4,689,171).

Blunck et al discloses anthraquinone dyes represented by the following formula:



where Y_1-Y_4 is amino (i.e., R = hydrogen) or hydrogen and X_1 and X_3 are aliphatic, aromatic, heterocyclic, or halogen groups (col. 53, lines 1-37). A 1,8-diaminoanthraquinone is immediately envisaged with the presently claimed functional groups.

Blucnk et al does not explicitly disclose the % purity of the obtained anthraquinone, however, note col. 8, lines 11-15 where the anthraquinone is purified by a variety of methods.

Given that Blunck et al discloses means of purifying and therefore the intention of obtaining a pure anthraquinone, it would have been obvious to one of ordinary skill in the art to either obtain a purity of at least 90 wt % with Blunck et al's disclosed technique or to utilize another known purification technique which would provide the presently claimed purity.

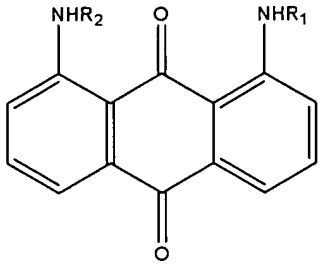
10. Claims 1-6, 8-15, 17-25, 28-30, and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (US 3,853,807).

Hunter discloses a polyester composition comprising 500 ppm (0.05 wt %) of 1,8-bis-cyclohexyl amino anthraquinone (col. 6, lines 59-63; col. 7, line 60 to col. 8, line 1) utilized in a polyester film article that was molded (col. 10, lines 7-35)..

While Hunter does not disclose the purity of the dye, it is the examiner's position that it would have been well within the capabilities of one of ordinary skill in the art to utilize a dye with desired purity, including a purity of 90 wt % or greater. Since Hunter discloses the presently claimed anthraquinone dye in a polymeric resin, it is intrinsic that the dye and the composition give the presently claimed properties since such properties are evidently dependent upon the nature of the material used.

11. Claims 1-26, 28-30, and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (US 5,882,358) in view of the combined teachings of Orelup (US 4,735,631) and Genta (US 3,923,454).

Smith et al discloses transmission fluids comprising an 1,8-diaminoanthraquinone dye having the following structure



wherein $R_1$and R_2 are the same or different alkyl or cycloalkyl groups with at least 2 carbons (col. 2, lines 20-33) wherein cyclohexyl and isopropyl groups are immediately envisaged.

Smith et al does not disclose the wt % purity of the dyes or the use of its dye in any other medium other than transmission fluid like polymeric resin in specific amounts.

With respect to the purity, Smith et al teaches that the dyes are filtered and washed to remove inorganic salts (col. 4, lines 23-27)), i.e., that they are purified. Given that Smith et al discloses a means of purifying and therefore the intention of obtaining a pure anthraquinone, it would have been obvious to one of ordinary skill in the art to either obtain a purity of at least 90 wt % with Smith et al's disclosed technique or to utilize another known purification technique which would provide the presently claimed purity.

With respect to the polymeric resin, Orelup teaches that anthraquinone tagging compounds in liquids like petroleum which are in the same field of endeavor as Smith et al are more commonly used for dying polymeric resins (col. 3, lines 57-63).

In addition, Genta discloses anthraquinone compositions and teaches that anthraquinones have long been known in the dye art to color polymers such as polycarbonate (col. 1, lines 8-10; col. 5, line 51 to col. 6, line 11) and further discloses that anthraquinone dye is used in an amount

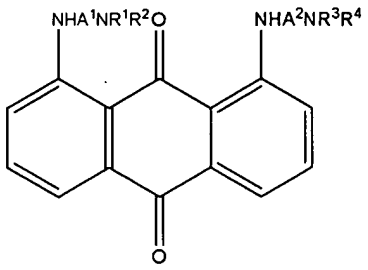
less 15 %, most preferably from 0.0001% to about 1 % (col. 6, lines 42-46) to form a rigid plastic substrate which is shaped into an article (col. 5, line 41 to col. 6, line 11). The article is made by coloring the resin with the dye through pigmentation processes, i.e., the dye is mixed with the resin using sets of mixing rollers, mixing or milling apparatus (i.e., pelletized) and then shaped into the desired final article form (col. 6, lines 12-32).

Given that anthraquinones are commonly known to be utilized as both tagging agents in liquids and as a colorant in polymeric resins as taught by both Orelup and Genta, it would have been obvious to utilize the anthraquinone dye of Smith et al in a polymeric resin.

In light of the above discussion, it would have been obvious to one of ordinary skill in the art to utilize an anthraquinone dye as disclosed by Smith et al in a purity greater than or equal to 90 wt % in a polymeric resin and processed as taught by Orelup and Genta. Although Smith et al does not disclose the properties of the anthraquinone dye alone and the composition with the anthraquinone dye, it is the examiner's position that given Smith et al discloses the presently claimed anthraquinone dye and further given that it is considered obvious to combined Smith et al's dye with a polymeric resin as discussed above, it is intrinsic that the dye and composition give the presently claimed properties since such properties are evidently dependent upon the nature of the material used.

12. Claims 1-13, 16-26, 28-30, and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turner et al (GB 985,970) in view of the combined teachings of Priester et al (US 4,655,970) and Genta (US 3,923,454).

Turner et al discloses diaminoanthraquinones having the following structure:



wherein A^1 and A^2 are straight or branched alkylene chains containing 2-12 carbon atoms (i.e., propyl or ethyl) and NR^1R^2 and NR^3R^4 are dimethylamino, diethylamino, 6-membered heterocyclic ring (e.g., piperidino, morpholino) or 5-membered heterocyclic ring (e.g., pyrrolidino) (page 1, lines 6-18). Note in Example 1 that the diaminoanthraquinone gives off a purple color (page 2, lines 32-33).

Turner et al does not disclose the purity of the diaminoanthraquinone or the use of its diaminoanthraquinone in a polymeric resin in specific amounts

With respect to the purity, note in Example 1 where the compound is purified by filtered, precipitation, washed, dried, crystallized, etc (page 2, lines 25-35). Given that Turner et al discloses a means of purifying and therefore the intention of obtaining a pure anthraquinone, it would have been obvious to one of ordinary skill in the art to either obtain a purity of at least 90 wt % with Turner et al's disclosed technique or to utilize another known purification technique which would provide the presently claimed purity of equal to or greater than 90 wt %.

With respect to the polymeric resin, Priester et al discloses diaminoanthraquinones like Turner et al (col. 3, line 36 to col. 4, line 18) and teaches that they are useful as dyes (col. 5, lines 55-60).

In addition, Genta discloses anthraquinone compositions and teaches that anthraquinones have long been known in the dye art to color polymers such as polycarbonate (col. 1, lines 8-10;

col. 5, line 51 to col. 6, line 11) and further discloses that anthraquinone dye is used in an amount less 15 %, most preferably from 0.0001% to about 1 % (col. 6, lines 42-46) to form a rigid plastic substrate which is shaped into an article (col. 5, line 41 to col. 6, line 11). The article is made by coloring the resin with the dye through pigmentation processes, i.e., the dye is mixed with the resin using sets of mixing rollers, mixing or milling apparatus (i.e., pelletized) and then shaped into the desired final article form (col. 6, lines 12-32).

Given that the diaminoanthraquinones taught by Turner et al are commonly known to be utilized as dyes as taught by Priester et al and further given that anthraquinone dyes are widely utilized for coloring polymeric resins as taught by Genta, it would have been obvious to utilize the anthraquinone dye of Turner et al which gives off a purplish color as a dye in a polymeric resin.

In light of the above discussion, it would have been obvious to one of ordinary skill in the art to utilize an anthraquinone dye as disclosed by Turner et al in a purity greater than or equal to 90 wt % in a polymeric resin and processed as taught by Priester et al nd Genta. Although Turner et al does not disclose the properties of the anthraquinone dye alone and the composition with the anthraquinone dye, it is the examiner's position that given that Turner et al discloses the presently claimed anthraquinone dye and further given that it is considered obvious to combined Turner et al's anthraquinone compounds with a polymeric resin as discussed above, it is intrinsic that the anthraquinone compound and composition give the presently claimed properties since such properties are evidently dependent upon the nature of the material used.

13. Claims 27 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Smith et al (US 5,882,358) in view of the combined teachings of Orelup (US 4,735,631) and Genta (US 3,923,454) or Turner et al (GB 985,970) in view of the combined teachings of Priester et al (US 4,655,970) and Genta (US 3,923,454), either of which and further in view of Adachi et al (US 5,747,632).

The discussions with respect to Smith et al, Orelup, and Genta in paragraph 11 above and with respect to Turner et al, Priester et al, and Genta in paragraph 12 above are incorporated here by reference.

The aforementioned references are silent with respect to the weight-average molecular weight of the polycarbonate resin.

Adachi et al teaches that low molecular weight polycarbonate has a relatively higher flowability in which both molding transcription and cycle times-shortening is suitable for the production of optical recording mediums (col. 2, lines 43-47). Adachi et al exemplifies polycarbonates with a range of viscosity average molecular weight of 13,000 to 20,000 (col. 12, lines 34-39).

Since Adachi et al teaches that relatively low molecular weight polycarbonate provides improved flowability properties, it would have been obvious to one of ordinary skill in the art to utilize a polycarbonate with a weight average molecular of less than 20,000 in the composition disclosed by the combined teachings of Smith et al, Orelup, and Genta or the combined teachings of Turner et al, Priester et al, and Genta--and thereby arrive at the presently cited claims.

Response to Arguments

15. Applicant's arguments filed 6/29/2005 are moot in view of the new grounds of rejection.

Contact Information

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

9/16/2005
vr

Callie Shosho

CALLIE E. SHOSHO
PRIMARY EXAMINER